

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) An image processing apparatus comprising:
 - a characteristic signal calculation section that calculates [[a]] at least one characteristic amount of an input image signal to produce a first characteristic signal;
 - a conversion process section that executes a conversion process for decreasing a signal amount resolution and the number of bits of [[a]] the first characteristic signal calculated produced by the characteristic signal calculation section to convert the first characteristic signal into a second characteristic signal having a characteristic amount smaller than that of the first characteristic signal;
 - a storing section that stores the second characteristic signal that is converted obtained by conversion by the conversion process section;
 - an arithmetic section a processor that reads out the second characteristic signal stored in the storing section, and executes a predetermined an arithmetic operation for only a macro-scoped correction process with software or an arithmetic operation for both the macro-scoped correction process and a macro-discrimination process with the software;
 - a synthesizing process section that outputs a discrimination signal obtained by synthesizing an arithmetic result of the arithmetic section processor and the first characteristic signal calculated produced by the characteristic signal calculation section; and
 - an image processing section that executes a color conversion process, a filter frequency filtering process and a tone process for the image signal in accordance with the discrimination signal output from the synthesizing process section[.],
 - wherein in the macro-scoped process, a pixel value is corrected by one of a smearing process in which pixel values of pixels interposed between two pixels which both have a value "1", and which are separated from each other by a distance of a predetermined value or less are changed to "1", and a majority process in which the number of pixels having pixel value "1", which are included in pixels close to a pixel of interest, is counted, and when the counted number is greater than a predetermined value, an output value is determined as "1",

and when the counted number is smaller than the predetermined value, the output value is determined as "0", and

wherein in the macro-discrimination process, a connected region is extracted with respect to a white background region, a halftone region, a character region and a halftone-dot region, and the extracted connected region is determined as one of a background graphic, a halftone-dot background graphic, a halftone-dot photo and a continuous photo region.

2. (Cancelled).

3. (Currently Amended) The image processing apparatus according to claim ~~[[2]]~~ 1, wherein ~~said-at-least-one~~ the characteristic signal calculation section includes an edge characteristic calculation section that calculates a degree of a linear edge ~~characteristic signal~~ for each pixel of the input image signal, and outputs an edge characteristic signal corresponding to the calculated degree of the linear edge.

4. (Currently Amended) The image processing apparatus according to claim ~~[[2]]~~ 1, wherein ~~said-at-least-one~~ the characteristic signal calculation section includes a halftone-dot characteristic section that outputs a halftone-screen characteristic signal indicative of presence/absence of ~~[[a]]~~ the halftone-screen region with respect to the input image signal.

5. (Currently Amended) The image processing apparatus according to claim ~~[[2]]~~ 1, wherein ~~said-at-least-one~~ the characteristic signal calculation section includes an achromatic characteristic calculation section that outputs an achromatic characteristic signal indicative of a characteristic signal of a chroma saturation of a pixel with respect to the input image signal.

6. (Currently Amended) The image processing apparatus according to claim ~~[[2]]~~ 1, wherein ~~said-at-least-one~~ the characteristic signal calculation section includes a brightness characteristic calculation section that calculates a brightness from the input image signal, ~~expresses the brightness by three values,~~ and produces a halftone characteristic signal and a white background characteristic signal in accordance with a relationship between the

brightness and two predetermined threshold values, which is obtained by comparing the brightness with the two predetermined threshold values.

7. (Cancelled).

8. (Original) The image processing apparatus according to claim 1, wherein the image processing section includes a color conversion section that executes a color conversion of the image signal in accordance with the discrimination signal, a filter section that executes a filtering process in accordance with the discrimination signal, and a tone processing section that executes a tone processing in accordance with the discrimination signal.

9. (Original) The image processing apparatus according to claim 8, wherein the color conversion section converts RGB image signals to YMCK density signals, using a text region conversion table or a photo region conversion table in accordance with the discrimination signal.

10. (Original) The image processing apparatus according to claim 8, wherein the filter section executes the filtering process using a high-frequency emphasis filter and a smoothing filter in accordance with the discrimination signal.

11. (Original) The image processing apparatus according to claim 8, wherein the tone process section executes the tone process using a text region pattern and a photo region pattern in accordance with the discrimination signal.

12. (Cancelled).

13. (Currently Amended) The image processing apparatus according to claim 1, wherein the ~~arithmetic section~~ processor reads out the second characteristic signal stored in the storing section and performs, in accordance with a preset process mode, the arithmetic operation for the macro-scoped correction process and the macro-discrimination process, or the arithmetic operation for only the macro-scoped correction process.

14. (Cancelled).

15. (Currently Amended) An image processing method for an image processing apparatus, comprising:

calculating a at least one characteristic ~~signal~~ amount of an input image signal to produce a first characteristic signal;

executing a conversion process for decreasing a ~~signal-amount~~ resolution and the number of bits of ~~a-calculated~~ the produced first characteristic ~~signals~~ signal to convert the first characteristic signal into a second characteristic signal having a characteristic amount smaller than that of the first characteristic signal;

storing the ~~converted~~ second characteristic ~~signals~~ signal obtained by the conversion process;

reading out the stored second characteristic signal, and executing ~~a-predetermined~~ an arithmetic operation for only a macro-scoped correction process with software or an arithmetic operation for both the macro-scoped correction process and a macro-discrimination process with the software;

outputting a discrimination signal obtained by synthesizing an arithmetic result of the arithmetic operation and the ~~calculated~~ produced first characteristic ~~signals~~ signal; and

executing a color conversion process, a filter frequency filtering process and a tone process for the image signal in accordance with the output discrimination signal[.],

wherein in the macro-scoped process, a pixel value is corrected by one of a smearing process in which pixel values of pixels interposed between two pixels which both have a value "1", and which are separated from each other by a distance of a predetermined value or less are changed to "1", and a majority process in which the number of pixels having pixel value "1", which are included in pixels close to a pixel of interest, is counted, and when the counted number is greater than a predetermined value, an output value is determined as "1", and when the counted number is smaller than the predetermined value, the output value is determined as "0", and

wherein in the macro-discrimination process, a connected region is extracted with respect to a white background region, a halftone region, a character region and a halftone-dot region, and the extracted connected region is determined as one of a background graphic, a halftone-dot background graphic, a halftone-dot photo and a continuous photo region.

16. (Cancelled).

17. (Currently Amended) The image processing method according to claim 15, wherein the stored second characteristic signal is read out and the arithmetic operation performs, in accordance with a preset process mode, the arithmetic operation for the macro-

scoped correction process and the macro-discrimination process, or the arithmetic operation for only the macro-scoped correction process.

18. (Cancelled).